

FIBERSPAR SPOOLABLE NEWS

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EnCana deploys composite flowlines at Jonah

Safety and installation advantages over steel?

by Rob Shaul

"The reason I like it so much is the ease of the installation and the impact to the ground," explains EnCana's Production Manager for the Jonah Field, Chris House about the use of Fiberspar brand composite flowlines. "It goes in a lot easier with less impact to the environment and it's a much safer installation."

Fiberspar, a 15-year old company, got it start building composite windsurfing masts and other composite items for the sporting goods industry. Fiberspar has been manufacturing composite pipelines for six years says the company's Rufus Mullins.

EnCana has used composite flowlines extensively in Canada, but use of the product is relatively new at Jonah.

Thus far, EnCana has laid approximately five miles of the three to four-inch composite flowlines at Jonah, Mr. House said, and has another five miles sitting on spools in its yard.

Unlike steel pipe, which required a two-four foot ditch, right of way and burn, Fiberspar flowline can be laid in simple 8-in. trench.

This decreases surface disturbance significantly, Mr. House explains, keeping in line with EnCana's wish to mitigate development at Jonah.

Because ends of Fiberspar are fitted together with mechanical connectors rather than welds, welders and the fire hazards which come with them are not needed.

J. L. Gray Pipeline and Construction lays the Fiberspar lines for EnCana. Company owner Jim Gray says working with the composite line cuts flowline installation time and needed labor force in half. Welding sections of pipe, using heavy equipment to lower the pipe into the trench, and then coming back and taping all the joints are just three steps saved. Safety is another advantage composite

flowlines have over steel Mr. House says. Laying steel pipelines means handling a lot more heavy materials than laying the composite flowlines.

Also, Fiberspar come off of huge spools which may hold as much as 4,500 feet of 4-in. flowline. This means many fewer joints and connections, which translates into fewer pinch points from a safety perspective, faster installation, and less friction acting on the production gas.

Fiberspar uses patented connectors to tie one piece of its composite pipe to another. The connectors use mechanical compression and O-rings and do not rely on glue, epoxies or threads cut into the composite. Common tools are all that's required to install the connectors. A reciprocating saw can be used to cut the pipe.

At the service ends of its compowsite lines, Fiberspar has developed three types of connectors to join the composite lines to the well head and production facilities. These service-end connectors include "Weld Prep"—suitable for welding to existing steel lines, welden on flange, or threaded.

Fiberspar says its pipe-to-pipe and service-end connectors have a design factor more than four times the pipe's operating rating and crews can be quickly trained to install the line and make the connections.

The company makes composite line from 2.5- to 4.5-in. in diameter. Maximum operating pressures range from 750 psi to 2,500 psi depending on the weight of the line used.

EnCana has used 3- and 4-in. Fiberspar thus far. It has employed the composite line as production flowlines mostly, and to carry water at it water injection facility at Jonah.

Mr. Mullins says Fiberspar's composite lines can be used for any type of flowline or injection line. In addition to EnCana, Fiberspar currently has eight Wyoming customers using its product and has opened a service center in Rock Springs.

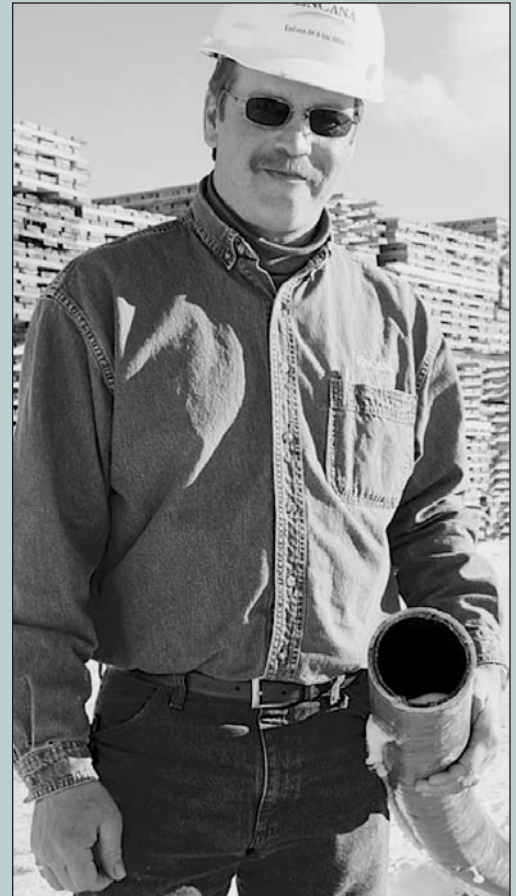
Jim Gray said his crews installed similar product for Questar on the Mesa. Questar was using the composite lines to flow produced water. And for the past 10 years, J. L. Gray has been installing "Zap-Lok" steel flowlines for

EOG Resources. These lines are pressed together, not welded, Mr. Gray explains, saving time and expense.

Fiberspar is non-corrosive, another advantage over steel, and has an operating life in excess of 20 years Mr. Mullins said.

In terms of cost, Fiberspar's overall cost is comparable to steel pipeline. The composite is more expensive than steel pipeline, but makes up for this initial price difference with savings in installation.

Fiberspar offers EnCana less ground disturbance, less friction loss, and a longer live span than steel pipe Mr. House says. "You're actually getting a better product for the same price.



EnCana has five miles of Fiberspar's composite flowline already in the ground at Jonah, and has another five miles waiting to be laid in the yard. Production manager Chris House tout's the composite pipeline's decreased surface disturbance, ease of installation, and overall safety as its benefits. "you're actually getting a better product for the same price," he says of Fiberspar's advantages over traditional steel flowlines.

Fiberspar® pipe is covered by one or more of the following U.S. Patents: pat. 5,921,285, pat. 5,908,049; pat. 5,913,337; pat. 6,004,639; pat. 6,016,845; pat. 6,148,866; pat. 6,286,558; pat. 6,357,485; pat. 6,361,299; pat. RE 35,081, pat. 6,604,550; pat. 5,176,180; pat. 6,706,348; pat. 6,663,453; pat. 6,764,365; and one or more of the following Canadian patents: pat. 2,076,391, pat. 2,233,295 and pat. 2,282,358. Fiberspar® connectors are covered by the U.S. Patent: 5,988,702, with additional patents pending.

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